



Attorney Docket No. IMMR-106/01US

COPY

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Louis B. ROSENBERG *et al.*

Serial No.: 10/615,927

Examiner: Unassigned

Filed: July 10, 2003

Art Unit: 2675

Confirmation No. 9912

For: **NETWORKED APPLICATIONS INCLUDING HAPTIC FEEDBACK**

U.S. Patent and Trademark Office
220-20th Street S.
Customer Window, Mail Stop Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.
§§1.97 and 1.98.

- Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is provided on the enclosed CD.
- No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 09/153,781, filed September 16, 1998, 08/571,606 (now U.S. Patent No. 6,219,032 B1), 09/050,665 (now U.S. Patent No. 6,219,033 B1), 08/664,086 (now U.S. Patent No. 6,028,593), 08/691,852 (now U.S. Patent No. 5,956,484) and/or 08/566,282 (now U.S. Patent No. 5,734,373) to which the above-identified application claims priority under 35 U.S.C. §120.
- No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- Publication(s) _____ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to _____ application serial no. _____ and mailed on _____.
- Enclosed is a copy of a non-English publication(s) _____. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- Enclosed is a copy of a non-English publication(s) ___. English language publication __ (copy enclosed) claims priority from this non-English publication.
- Enclosed is an explanation of non-English publication(s) __ for which an English translation is not available.
- Enclosed is an English translation of non-English publication(s) __ cited in the attached Form PTO/SB/08A.
- Enclosed is a copy of pending patent Application Serial No. __.

This Information Disclosure Statement is filed within any one of the following time periods:

- within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- within three months from the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in this international application;
- before the mailing date of a first office action on the merits; or
- before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

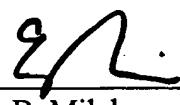
It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: October 18, 2004

Respectfully submitted,
COOLEY GODWARD LLP

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Reg. No. 42,887



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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

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of

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Complete If Known

Application Number	10/615,927
Filing Date	July 10, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Unassigned

Attorney Docket Number

IMMR106/01US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,422,941	7/23/2002	Thomer et al.	
		6,349,301	2/19/2002	Mitchell et al.	
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		4,885,565	12/5/1989	Embach	
		4,794,392	12/27/1988	Selinko	
		4,713,007	12/15/1987	Alban	

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		Number	Kind Code ² (if known)			
		4,708,656		11/24/1987	De Vries et al.	
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		2,972,140		2/14/1961	Hirsch	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		EP	0349086		1/3/1990	Stork Kwant B.V.	
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS		
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		BAIGRIE, "Electric Control Loading - A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990.
		IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.
		RUSSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> , pp. 1-131, May 1990, archived 08/14/1990.
		BROOKS et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11; NASA-CR-175890; N85-28559</i> , pp. 1-84, 03/1/1985.
		JONES et al., "A perceptual analysis of stiffness," <i>ISSN 0014-4819 Springer International (Springer-Verlag); Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990.
		BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and Its Application to Robotic Teleoperation," <i>1993 IEEE International Conference on Robotics and Automation</i> , pp. 25-44, 05/02/1993.
		SNOW et al., "Model-X Force-Reflecting-Hand-Controller," <i>NT Control No. NPO-17851; JPL Case No. 7348</i> , pp. 1-4, with 45 pages of attachments, 06/15/1989.
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Examiner Signature		Date Considered	
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		KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.	
		PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.	
		ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90.	
		BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980.	
		BEJCZY et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISMM-IFTOMM</i> , Sep. 8-12, 1981.	
		MCAFFEE, "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," <i>JPL D-5172</i> , January 1988.	
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		SHIMOOGA, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30 - Oct. 1, 1992.	
		IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990.	
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		HOWE, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992.	
		EBERHARDT et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993.	
		RABINOWITZ et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contactor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987.	

Examiner Signature	Date Considered
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		BEJCZY et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980.
		BEJCZY et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," <i>SOAR '89 Workshop</i> , JSC, Houston, TX, July 25-27, 1989.
		OUH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995.
		MARCUS, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sept. 8-11, 1994.
		BEJCZY, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
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		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

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		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/Issue21/greviews/cyberman.html , 1994.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).
		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
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		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

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				First Named Inventor	Louis B. Rosenberg
				Art Unit	2675.
				Examiner Name	Unassigned
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U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
		2,906,179	09/1959	Bower	
		3,157,853	11/17/1964	Hirsch	
		3,220,121	11/30/1965	Cutler	
		3,490,059	01/1970	Paulsen et al.	
		3,497,668	2/24/1970	Hirsch	
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		3,531,868	10/1970	Stevenson	
		3,795,150	03/1974	Eckhardt	
		3,875,488	04/1975	Crocker et al.	
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		3,902,687	6/25/1973	Hightower	
		3,903,614	09/09/1975	Diamond et al.	
		3,919,691	11/11/1975	Noll	
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		3,944,798	03/1976	Eaton	
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		4,593,470	06/1986	Davies	
		4,599,070	07/08/1986	Hladky et al.	

Examiner Signature	Date Considered
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				Application Number	10/615,927
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				First Named Inventor	Louis B. Rosenberg
				Art Unit	2675,
				Examiner Name	Unassigned
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		Number	Kind Code ² (if known)			
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		4,632,341		07/1987	Repperger et al.	
		4,638,798		01/1987	Sheldon et al.	
		4,653,011		03/1987	Iwano	
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				First Named Inventor	Louis B. Rosenberg
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		Number Kind Code ² (if known)			
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		4,925,312	05/1990	Onaga et al.	
		4,930,770	06/05/1990	Baker	
		4,934,694	06/19/1990	McIntosh	
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		5,040,306	08/1991	McMurtry et al.	
		5,044,956	09/03/1991	Bebensky et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/615,927
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Sheet	4	of	18	First Named Inventor	Louis B. Rosenberg
				Art Unit	2675
				Examiner Name	Unassigned
				Attorney Docket Number	IMMR106/01US

U.S. PATENT DOCUMENTS				
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		5,050,608	09/29/1991	Watanabe et al.
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		5,072,361	12/10/1991	Davis et al.
		5,076,517	12/1991	Ferranti et al.
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		5,189,355	02/1993	Larkins et al.

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First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Unassigned

Attorney Docket Number

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		5,189,806	03/1993	McMurtry et al.	
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		5,203,563	04/1993	Loper, III	
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		5,235,868	08/1993	Culver	
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		5,313,230	05/1994	Venolia et al.	

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First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Unassigned
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		5,334,027	08/02/1994	Wherlock	
		5,341,459	08/23/1994	Backes	
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		5,379,663	01/1995	Hara	
		5,381,080	01/1995	Schnell et al.	
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		5,389,865	02/14/1995	Jacobus et al.	
		5,396,266	03/07/1995	Brimhall	
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Examiner Name	Unassigned

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Application Number	10/615,927
Filing Date	July 10, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2675.
Examiner Name	Unassigned

Attorney Docket Number

IMMR106/01US

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Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

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of

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Complete if Known	
Application Number	10/615,927
Filing Date	July 10, 2003
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Unassigned
Attorney Docket Number	IMMR106/01US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial; symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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